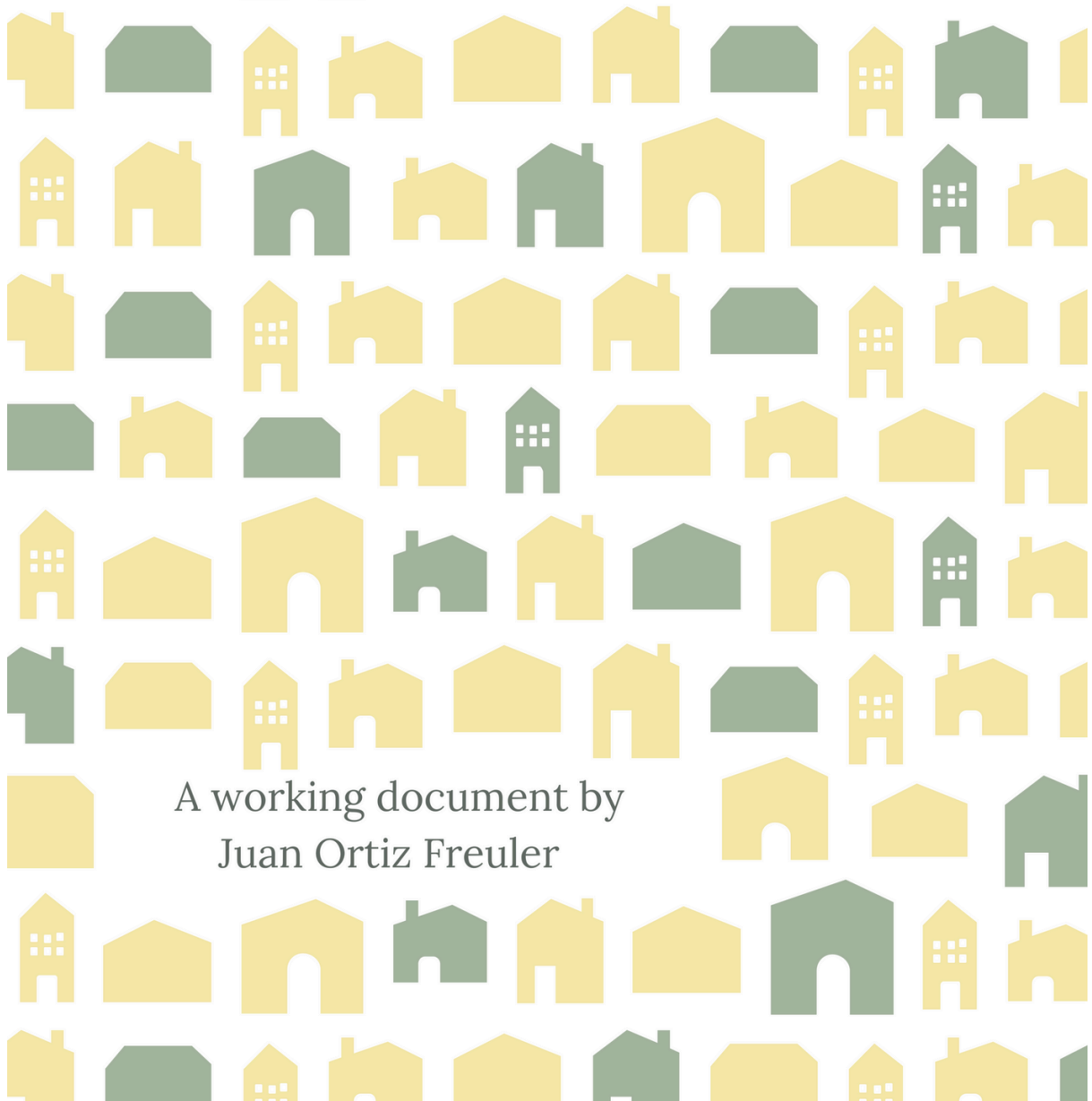




Universal Internet Access policies:

The case of Mexico



A working document by
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About this document

This is a preliminary document specifically prepared for the 2016 IGF Conference in Guadalajara, where it was presented¹. It provides an overview of the research I carried out from September to November 2016 as a Google Policy Fellow in the offices of the Mexican NGO *Red en Defensa de los Derechos Digitales* Network in Defense of Digital Rights - ([R3D](#)). I am grateful to members of R3D for the technical support that has made this research possible. At this stage, nonetheless, I take full responsibility for the content of this piece.

Hopefully, this brief will trigger a conversation that may allow us to gain further insights regarding the design, implementation, and evaluation of a policy that aims to bridge the gap in Internet access in Mexico. Over the next months a broader set of components of the Mexico Conectado Program will be incorporated into the research.

Suggestions, insights and comments regarding both the policy and the research are welcome [on this document](#), by email (juanortizfreuler@gmail.com), or by Twitter ([@JuanOF9](#)).

Special thanks to Lofred Madzou and Bertie Vidgen for proofreading and comments

¹ Added Monday 12/12: The video of the IGF presentation is available [here](#)

Comments: The Constitution actually refers to Universal coverage (the availability of service, not access) though arguably referring to access. The Mexico Conectado policy actually refers to Universal access (not coverage), which is the appropriate interpretation of the Constitutional provision.

Regarding Helani Galpaya's comment (1:10:36) on the need to move towards metrics that focus on the quality of online participation instead of connected/unconnected metrics, I agree: access is not enough to harness the value of the Internet as a tool for politics. Nevertheless, if online participatory channels were effective in generating policy changes, and half the population is still unconnected, we could be favoring mechanisms that further entrench the richer half of the population. Governments relying on effective e-consultations in contexts of limited access to the Internet could be undermining the democratic basis of their standing as representatives of the people (in the broader sense of the concept).

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Why care about Internet access?

Access to the Internet is a fundamental tool for democracy. The Internet makes it easier for citizens to inform, express, and organize in defense of their rights and interests. However, according to Government surveys, in 2014 one out of every two Mexicans had not accessed this service even once throughout the previous 12 months. This gap in Internet access not only reflects the deep economic inequalities that afflict the country, but also deepens them.

Economic inequality reflects injustices that require strong government action. Inequality fragments our societies between groups that have access to certain goods, and can effectively exercise certain rights, and those that do not. A fragmented society is incapable of coordinating actions for the fulfillment of major projects, and the injustice that underlies inequality is a breeding ground for violence. **A model that generates inequalities, therefore, is neither fair nor sustainable.**

Defining which policies will be implemented to reverse inequality must involve a process that incorporates the entire population and ensures that the arguments and interests of all the groups that compose the social fabric are considered. This not only legitimizes the policy, but increases the likelihood of it being implemented successfully. **The Internet has proven to be a useful tool for reducing communication costs. It facilitates not only the aggregation of large quantities of opinions but also access to information and debates. Therefore, it is important that the Internet is a medium that reflects the plurality of voices that coexist in Mexico.** Otherwise, it becomes a tool that further strengthens the position of those who are already favored by the current system.

To sum up, I propose government programs focused on Universal Access to the Internet should first and foremost enable societies to achieve greater control over the direction of their collective projects. That said, it is necessary to address two issues which I believe require further discussion within this agenda: undue government surveillance, and the distribution of economic resources made possible by the Internet and ICTs.

It is important to remember that the Government of Mexico, as many others, executes programs of surveillance that are as extensive as they are undue and illegal ([here](#) - Spanish). If we are to expect the Internet to be a tool for the people to debate and organize themselves in defense of their interests, **then the Internet must remain a space where people feel comfortable enough to voice their grievances, concerns, and even anger.** When the Government, as happens in Mexico, uses its power to illegally surveil and monitor activists and journalists it undermines the realization of this objective. Furthermore, when the government offers to provide funding to connect small, forgotten, and often disenfranchised rural communities in the context of mass surveillance, it is not unreasonable for Internet activists to question its motives. The legitimacy of policies aimed at broadening access is undermined when people have reasons to believe the Internet is a tool to monitor, influence and control.

The second necessary discussion regards how the value produced by connectivity can and should be shared by the community. Though I put forward the idea that government access policies should focus on allowing people to regain control over how society is organized, economic "spillovers" should also be acknowledged. When people get access to the Internet they are not only obtaining a political tool. The Internet also enables them to access information about goods and services. As such, it broadens the market users are exposed to, and allows suppliers to use the Internet's infrastructure to scale up their businesses at a relatively low cost. Assuming this is the case, we should expect an increase in social welfare (a.k.a. *the cake will grow*). Yet, the fact that the cake grows does not necessarily mean that everyone at the table will get a bigger slice. It is theoretically possible for the cake to grow, and yet have a subset of actors whose slices either remain unchanged or shrink. It is important for the Government to regularly and publicly assess these effects and ensure that connected communities are capturing a fair portion of the gains created by the Internet. Unfortunately, defining 'fairness' would require more space than is convenient within this type of document. I will simply propose that a fair share is that which ensures the community's development in whatever way it chooses, and facilitates the accomplishment of personal goals by as many of its inhabitants as possible.

The Internet and ICTs allow processes to scale up effectively and efficiently, generating economies of scale which enable companies

that rely on the Internet and ICTs to grow quicker, and take over the markets of smaller or unconnected companies. **If unchecked, it would not be surprising if the Internet increases inequality by facilitating the flow of resources from the many to the few.** This would undermine the objective of creating more equal, fair, and sustainable societies.

A holistic implementation of government-funded access to the Internet policies should therefore involve local communities, tax collecting agencies, and economists in the debate.

📶 Mexico Conectado and Internet access in Mexico

[*Mexico Conectado*](#) ("Connected Mexico") is the Federal Government's key program regarding universal access to the Internet. It was established when the current administration took office in late 2012². At that point, 39.75% of Mexicans had used the Internet in the previous 12 months (from any location and device). Within a group of similar Latin American countries this placed Mexico at the lower end and above only Peru and Paraguay, countries with a significantly lower GDP per capita than Mexico³.

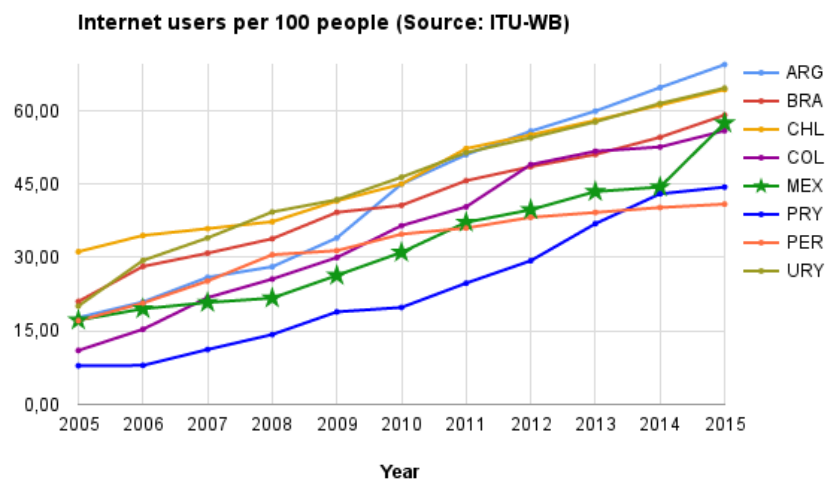


Fig. 1. Internet Users per 100 people. Created by the author based on data from the World Bank and ITU.

² Presidential periods last 6 years, and re-election is unconstitutional.

³ GDP per capita 2012 (USD): Mexico (9.817,84), Peru (6.423,56), Paraguay (3.680,23). Source: [World Bank Databank](#).

Mexico Conectado (MC) was outlined by the President's Office as part of the [National Digital Strategy](#)'s enablers, and has been rolled out by the Secretariat [Ministry] of Communications and Transport.

Though public officials usually present the Program as being focused on reducing the digital divide, it formally has three objectives:

- 1) To improve the coverage and quality of public services,
- 2) To reduce the digital divide, and
- 3) To save public resources by aggregating demand for Internet service from all levels of government in the public tenders.

Targets and budget

Initially, the Secretariat of Communications and Transport (SCT) stated that by 2018 it would provide Internet access to 250,000 public buildings and open spaces. By the end of 2015, only 101,000 sites had been connected⁴. In 2016 the Executive [reassigned](#) the budget allocated to MC by Congress (87.8 million U.S. dollars⁵) to other areas. The SCT was left with 16.82 Million USD to execute the Program (less than 20% of this original budget). Within this context of budgetary constraints, no further site were benefitted in 2016.

For 2017 the Executive's project proposed assigning a budget of 13.97 Million USD to MC. Following many newspaper [articles](#) that questioned MC's capacity to achieve its goals with such a (meagre) budget, Congress added a further 9.5 Million USD⁶ for MC. The 23.47 Million USD granted to MC for 2017 is only a small improvement on the 16.82 Million USD executed in 2016. And time will tell if the Executive decides to once again modify this budget, as happened in 2016. In this difficult context SCT representatives have suggested that 2018 targets will have to be redefined. In a recent [interview](#), the head of the SCT suggested the new target for 2018 will fall between

⁴ This official estimation includes 15 thousand sites connected by the previous Administration.

⁵ Original budget was 1815.7 Million Mexican Pesos. The conversion was carried out using Google on Dec 4, 2016, and thus applying that date's exchange rate.

⁶ 197 Million Mexican pesos ([here](#))

110,000 and 150,000 sites. In other words, the new target is to meet less than 60% of the initial goal of 250,000 sites.

📶 Beneficiaries & difficulties⁷

Today the Program operates in 21,000 localities. The aggregate population of these localities encompasses 84% of the total population of Mexico. Yet, by action or omission, the policy has prioritized localities that already had Internet access over those that did not. On average, 22.2% of households based in localities where MC operates had already privately contracted the Internet in 2010. For localities excluded by MC the percentage of households with Internet drops to 5.7% ([see](#): interactive graph in English). The difference is 16.5 percentage points.

This gap seems to be the result of how the policy creates incentives that are not geared towards connecting the unconnected:

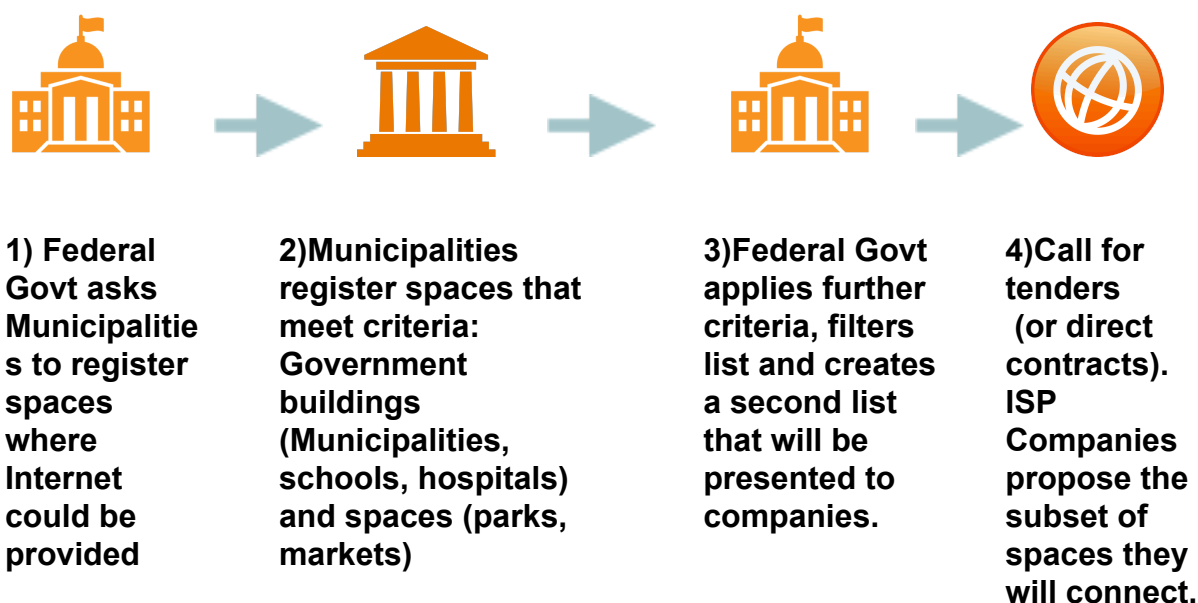


Fig. 2 Process through which beneficiary sites are defined. Created by the author based on public documents. Image credits in annex.

⁷ This section relies on a dataset I created by putting together: i) socio-demographic data from the last Census (2010), published by the National Institute of Statistical and Geographical Information of Mexico (INEGI), and ii) a dataset compiled by the Secretariat of Telecommunications which runs Mexico Conectado, consisting of the locations of sites where Internet was being provided.

These design problems manifest themselves in two steps:

- a) Municipalities register spaces where state infrastructure already exists (schools, hospitals, parks). That is, **municipalities are registering sites in comparatively more integrated spaces, where the state has invested in the past.**
- b) Internet Service Provider (ISP) companies have incentives to observe the list of sites registered by the Government, and propose to provide services to the subset of sites where this is comparatively more attractive in cost-benefit/supply and demand terms. That is, ISPs have incentives to select sites in localities
 - i) **where fixed costs are lower (supply):** ISP already provides services or provides services nearby.
 - ii) **where [potential] benefits are larger (demand):** populations have more disposable income, and are therefore potential clients.

In support of this position regarding private investment incentives, Fig. 3 (based on Census data from 2010) shows a positive correlation between the percentage of households with Internet access and the percentage of houses that have hired telephone and cellular services. This correlation could be interpreted in terms of supply or demand, though these effects are probably reinforcing each other:

- Supply: the infrastructure underlying the provision of these services becomes available simultaneously.
- Demand: People with more disposable income can spend more on both.

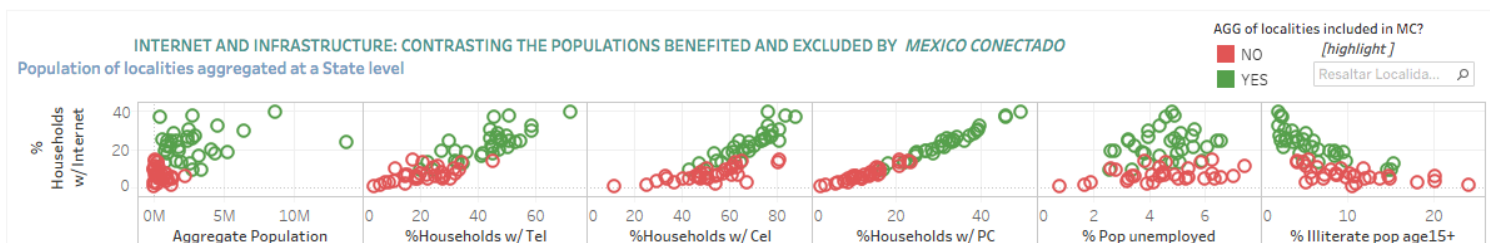
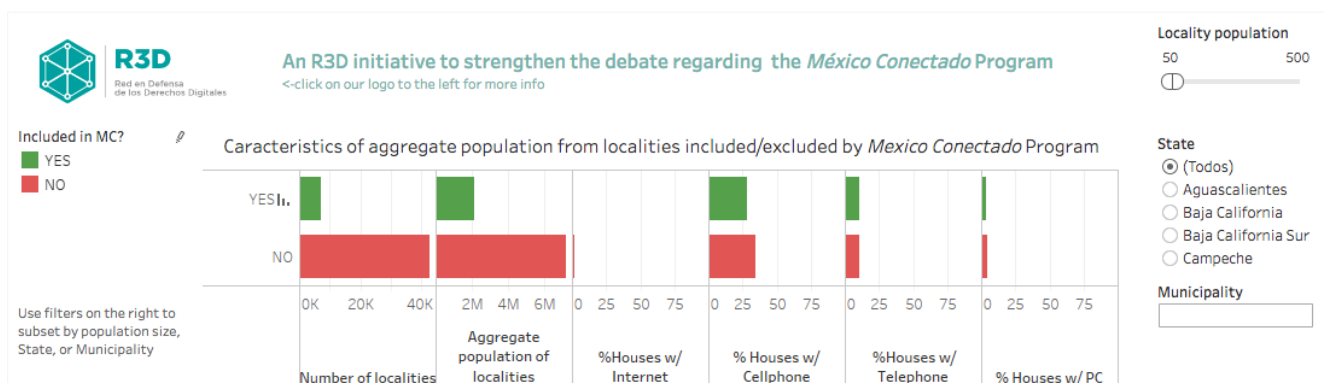


Fig. 3. Created by the author based on data from INEGI and Secretariat of Communications and Transport. Graph shows association between Internet penetration at household level and other socio-economic indicators. 64 observations per graph, two for each State (one in green, represents the average resulting from the

aggregate of the localities within that State where MC is operating. The one in red is the equivalent for localities where MC does not operate⁸). Available in interactive format [here](#).

In this way, the concatenation of steps 1-4 (Fig. 2) leads to a situation where the localities where MC operates were on average already more connected. As Fig. 3 shows, the red circles that represent the populations excluded by MC are usually the most disadvantaged not only in terms of access to the Internet, but also other communication services, including the most basic tool: literacy. One could argue that these sites are nonetheless still valuable as they help to to connect the subset of unconnected people within each benefitted locality. This may be so, and is a valid objective. Yet we must acknowledge these populations were based in localities where already in 2010 there was a stronger telecommunications infrastructure, and a higher percentage of people connected. These populations were relatively better off.

Drilling deeper into the data, this gap seems to be the result of a policy design that is prone to exclude small dwellings. Although the program operates in the 21,000 locations where 84% of the population is concentrated, it does not operate in 171,000 localities. Each and every one of these excluded localities has less than 100,000 inhabitants.



⁸ All localities recorded by the Census were divided into two categories: included/excluded by Mexico Conectado program. For each category the following calculation was carried out: Total number of houses with Internet/ total number of houses. Then control for each state were applied, which split each state into two observations.

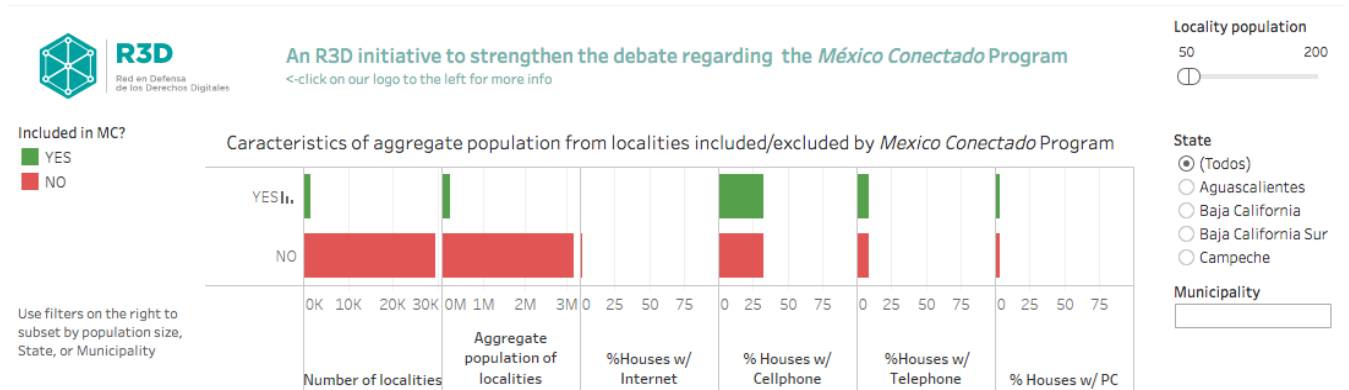


Fig. 3. Characteristics of populations included/excluded by MC. First graph shows subset data for localities with population 50-500, whilst the second one shows the data for localities with a population of 50-200. Created by the author using INEGI's Census data and SCT's data regarding MC. See Annex for access to data⁹.

According to the 2010 Census, more than 9 million people in Mexico live in localities with a population between 50 and 500 inhabitants scattered throughout 49 thousand locations. Within these localities Internet penetration at a household level had not reached 2% in 2010. The Program is only operating in 16.5% of these small localities. If we only consider localities with between 50 and 200 inhabitants, the percentage of included localities drops to 5.5%.

These small localities are where government policies should be focusing. These are places where market mechanisms fail to provide companies with the necessary incentives for Internet service provision. By delegating the task of defining where to provide the service onto companies, the policy replicates the structure of incentives that generated the inequalities it seeks to solve.

⁹ Formulas applied as in Fig. 2 before controlling for State. Bar graph in interactive format available [here](#) (best viewed on laptop or tablet) allows user to introduce such controls.

📶 How is this policy evaluated?

At a micro level, existing metrics focus on the number of sites connected by the government each year, and the level of use of installed capacity in sites that are operational (point 8, [here](#)). At the macro level, there are broadly stated objectives in the Constitution (universal coverage) and the National Development Plan (broadening coverage and access). Yet, there is no official metric or variable with which to evaluate the project.

In terms of evaluations, a critical [report](#) was published by the National Audit Office in early 2015. Amongst other issues, the report—based on the analysis of 81 randomly selected sites—highlights that 45.4% of the sites had levels of use of less than 5% of installed capacity. It also underlines the many abuses carried out by contracted ISPs, which the Executive has failed to sanction. The Audit Office estimates the State could have collected over 1 million USD¹⁰ in fines. This amounts to over 6% of MC's budget for 2016.

Nevertheless, there is no official document assessing the overall impact of Mexico Conectado: Is it really helping to bridge the gap and connect those who do not have Internet access? Throughout this section, I will explain how the Executive has made evaluating Internet usage more difficult.

When we asked the Office of the President what metrics they believed should be applied to assess the policy, they [replied](#):

- OECD Index of Citizens Interacting with their government via Internet;
- Digitization Index, carried out by Telecom Advisory Services [TAS]

Both the OECD Index and TAS Index ([see](#) pg 389) rely on data collected yearly by the National Institute of Statistical and Geographical Information of Mexico (INEGI). The data produced by

¹⁰ 20,924,400 mexican pesos. The exchange rate applied corresponds to Dec 4 2016, yet the estimation was published in early 2015, when the Mexican peso was stronger.

INEGI is then compiled by International agencies such as ITU and World Bank to produce comparable statistics about Internet and ICT usage worldwide. The data compiled by ITU and World Bank is in turn leveraged upon by organizations such as the OECD and TAS when they produce assessments and indexes. INEGI is therefore at the source of the data, and its methodological decisions have immense impact downstream.

Since 2001 INEGI, a body with technical and managerial autonomy, measures the use of the Internet and ICTs in Mexico. Amongst the most relevant components of this survey is a question used to estimate the percentage of the population that has used the Internet in the last 12 months. This is perhaps the most common statistic used to analyze and discuss Internet access (e.g. Fig. 1). Based on this data it would have been possible—at least in theory—to apply a [difference in differences](#) approach to estimate the impact of MC over time.

In 2015, the survey's methodology was modified as the result of a contract between INEGI and the Executive¹¹. The first survey produced using the new methodology reported an unprecedented 13 percentage points increase in the number of Mexicans who had used the Internet. Figure 4 shows that the angle at which the lines rise is out of place both within the Latin American context (Fig.1), and when contrasted with previous measurements of Internet use in Mexico (Fig. 4). By looking at interannual variations between the last five measurements it is possible to see that 2015 was the only year in which Internet use grew for all States¹².

These variations, together with the changes introduced to the methodology suggest the series has been broken. According to INEGI, the most relevant change was that "In (...) 2015 the information is provided by a randomly selected direct informant within the household, who describes his or her own experience using ICT, unlike [the previous measurements], where a single member provided information on the rest of the members." (Excerpt from INEGI's [response](#) to an Access to Information petition filed and translated by the author).

¹¹ The SCT paid approximately 425 691 USD dollars to modify the methodology, and have a say regarding the details of the tool (see pages 7 and 15, in Spanish [here](#))

¹² Interactive graph and table [here](#) (best viewed on laptop or tablet)

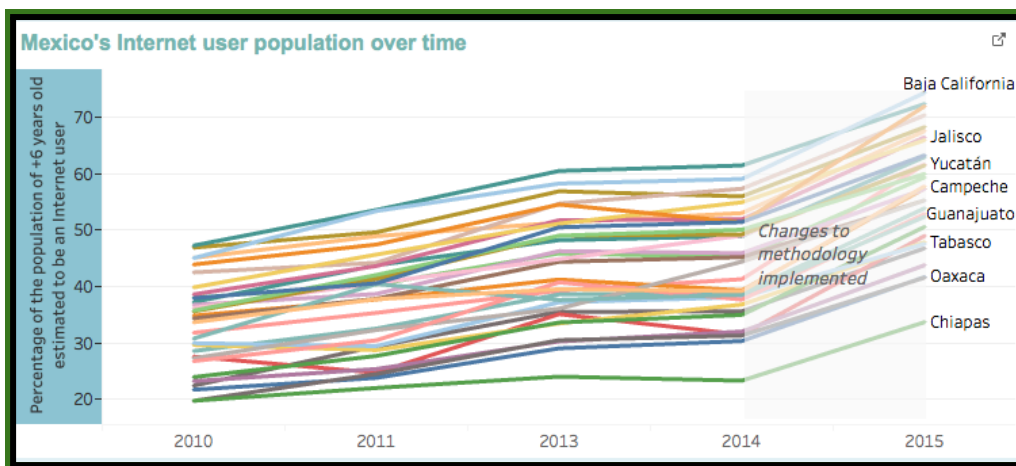


Fig. 4 Estimation of Internet Users by State. Created by the author based on annual reports published by INEGI. Interactive [graph](#) available for desktops.

The size of the sample also changed: it rose from an initial 43,822 households, to 90,030 in 2015. Though as a rule of thumb bigger samples increase the robustness of conclusions, a change in the sample might involve undue variations of the the sample population. For example, the proportion and weight of urban areas included in the sample might have increased.

Interestingly, despite having been responsible for relevant changes in the measurement tool, the communiqué issued by the SCT following the agreement with INEGI states that the results of the survey would be comparable with those of previous years (in Spanish [here](#)). I have not yet found any statement by INEGI clarifying whether or not the results are comparable. Nevertheless, when we presented an access to information petition asking INEGI to explain the reasons behind the 13 percentage point leap in Internet users registered between 2014 and 2015, they replied:

[This variation] "has two explanations, one part is associated with the methodological change incorporated in the ENDUTIH 2015 and, another part, associated with the consistent effort of the public policies to increase the number of Internet users. (Translated by the author. Original in Spanish [here](#))

INEGI has thus acknowledged there are two effects impacting on the results. Yet the survey is a tool designed to measure only exogenous

effects (policies, economics, etc, but not changes to measurement methodologies). At present, it is unclear which effect is having the greatest impact, and therefore the results recorded for 2015 are not comparable to previous results.

It is important to state that this does not mean the new methodology is better or worse at measuring how many people in fact use the Internet. That is yet to be analyzed. At this moment it is only possible to state that the inconsistencies in the methodology do not allow to assess how much Internet use has grown between 2012 and 2016. A key tool to measure MC's impact appears to have been disjointed. Assessing the Administration's progress in complying with Article 6 of the Constitution will be a more difficult task.

Preliminary conclusions

1. Policies designed to provide universal access need a clear overarching principle to guide them. I propose viewing the Internet as a tool for political participation, and the achievement of more just, and equal societies.
2. Policies that aim for universal access should be wary of relying on market incentives as a driver of change. By delegating the task of defining where to provide Mexico Conectado services onto companies, the policy replicated the structure of incentives that generated the inequalities it sought to solve.
3. Incorporating small unconnected localities might require re-thinking how the government provides support towards the goal of universal access. The current design of public tenders, where ISPs are expected to lay infrastructure and provide services to thousands of sites, favors big companies and excludes local cooperatives and community networks. The (currently excluded) smaller players have the flexibility, local knowledge, and technical expertise to provide quality services in localities which have been excluded. Furthermore, their design seems more prone to favor local reinvestment, and thus sustainable development.
4. Quality, timely and open data regarding the characteristics of the beneficiary populations and the services provided is necessary to evaluate and adjust policies. Making changes to the methodology that is used to measure Internet use half-way through the implementation of a policy limits the possibility of evaluating and adjusting the policy.

Next steps and research methodology

The evaluation of public policies in the context of a democracy is fundamental to ensure that they are advanced in accordance with the objectives and principles through which the people's representatives publicly justified them.

Since NGOs lack the procedural legitimacy that is attained by official representatives and public bodies through democratic procedures, much of their standing rests on the quality of their arguments. Accepting this premise, I believe the best way to advance the evaluation of Mexico Conectado is to **create an Observatory through which** a horizontal and rich debate regarding the Program can be fostered.

Anyone who reads the Observatory's materials should be able to verify what is argued by consulting the official documents, and have the necessary tools at hand to robustly counter-argument the observatory's positions. The Observatory will reach out to media and activists throughout the country. To enable a horizontal relationship with as many stakeholders as possible, the research will be conducted following a **blogging approach. This will include:**

- Data in open formats available for reutilization
- Open kitchen approach whereby data will be made available in open formats as collected (before publication)
- Interactive data visualizations so that the reader can apply different variables as control variables and see their effect.
- Documents open to comments (both official and our own)
- Offline gatherings documented by local activists

A procedural goal is to connect communities throughout the country so that they have a voice in this process. Journalists, bloggers, activists, academics, and unions have been identified as potential intermediaries in the task of achieving a broad geographical outreach.

Outreach is a key aspect of the theory of change that underlies the proposed methodology. The Program operates all around the country ([see](#)). The Federal government provides the funding but relies on Municipal governments to identify beneficiaries. Therefore the debate has to be taken to the Municipal level. This is fundamental to provide legitimacy to the conclusions the final document should arrive to, which would potentially determine the reallocation of service provision, affecting the lives of people throughout Mexico.

From a more procedural perspective, the initial goal is to measure quality of service in 400 randomly selected sites. This is an ambitious target. Yet, this is the minimum number of observations required to get a statistically relevant sample for each ISP providing services for MC.

In order to gather such a broad sample, the Observatory will rely on a crowdsourcing method: advanced survey software will be used to collect the data from volunteers. We will rely on screenshots and pictures of the site taken by the respondents to control and provide proof of the volunteer's compliance with the methodology. We are also exploring the possibility of generating alliances with workers' unions and pro bono programs within universities to coordinate this task in every State, and help collect the data from the more rural or otherwise less accessible sites.

Alliances with local newspapers, journalists and bloggers will be sought to curate data locally, and provide the appropriate context for it. This would help foster debate at a Municipality level regarding the places where access is most needed, why it was not provided, and what mechanisms are available for that gap to be filled.

This is only a brief sketch of the components and approaches that have been discussed regarding how to set up an Observatory of Connectivity Policy in Mexico. Recommendations, criticism, and support will be very well received. In particular I would like to hear from others who have experience relying on distributed methods for data collection, and/or regarding government funded universal access programs such as Mexico Conectado.

References & access to data

Image credits:

- Cover: [Canva](#)
- Logos next to titles: [Pixbay](#)
- Fig.2 (Government logos):
 - 1) [Foundation Technology](#), 2) [Wikimedia](#), 4) [Pixbay](#)

Data

- Data in open format (Spanish - [here](#))

Interactive graphs in English

- Map: 101,000 sites where MC is operating ([here](#))
- Simple bar graph to compare populations included/excluded by MC ([here](#))
- Scatterplots comparing included excluded populations across several socio-economic dimensions ([here](#))
- Impact of changes in methodology with which Internet use is measured ([here](#))

Key References

Normative context: Overview

Constitution:

Art. 6 of the [Constitution](#), reformed in 2007, states that

"Every person shall be entitled to free access to plural and timely information, as well as to search for, receive and distribute information and ideas of any kind, through any means of expression.

The State shall guarantee access to information and communication technology, access to the services of radio broadcast, telecommunications and broadband Internet. To that end, the State shall establish effective competition conditions for the provision of such services.

The State shall guarantee the integration to the information and knowledge society of its population through a policy of universal digital inclusion crafted with annual and sexennial goals.
(art. 6.B.1)

In turn, the transitional articles included as an appendix establish that:

The Federal Executive will be in charge of the policy of universal digital inclusion. (...) This policy will have, among other goals, that at least 70 percent of all households have access to the Internet with a real speed for the discharge of information in accordance with the average registered in the member countries of the Organization for the Economic Cooperation and Development ... [and will be established] a broadband program in public places that identifies The number of sites to connect each year, until reaching universal coverage ([Disposición decimocuarta](#))

Federal law on telecommunications and Broadcasting

(In Spanish [here](#))

Art. 3

XLIII. Universal Digital Inclusion Policy: A set of programs and strategies issued by the Federal Executive aimed at providing access to information and communication technologies, including broadband Internet for the entire population, with special emphasis on the most vulnerable sectors, With the purpose of closing the existing digital divide between individuals, households, companies and geographical areas of different socioeconomic level, regarding their opportunities of access to the technologies referred to and the use they make of them;

Universal Coverage

Article 210. To achieve universal coverage, the Secretariat shall prepare a social coverage program and a connectivity program in public places each year.

Article 211. The objective of the social coverage program is to increase the coverage of networks and the penetration of telecommunications services in priority areas defined by the Secretariat.

For the elaboration of the program of social coverage, the Secretariat will coordinate with the governments of the federative entities, the Government of the Federal District, the municipalities and the Institute. It will also receive and evaluate the proposals of any interested party by means established by the Secretariat for this purpose.

The Secretariat will define the telecommunication and broadcasting services to be included in the social coverage program, with priority to Internet access services and voice services, and will design and promote the incentives for the participation of the concessionaires in the same.

Article 212. **The Secretariat, in coordination with the Institute and the National Institute of Statistics and Geography, shall define and publish indicators to measure the evolution of telecommunication and broadcasting services throughout the national territory**, as far as possible and Without limitation, the internationally recognized methodologies that allow the measurement of progress and international comparison. These indicators will aim to quantify the progress of social coverage and connectivity programs in public places.

The concessionaires involved in social coverage programs will be obliged to report to the Secretariat the data that allow the quantification of the progress of social coverage programs and, where appropriate, compliance with the obligations acquired. The Secretariat will monitor the compliance of the concessionaires or authorized to the commitments acquired in the respective programs and the Institute will sanction the breach of the concessionaires or authorized to the obligations of social coverage or universal coverage that they have established.

Article 213. The National Council of Science and Technology, in coordination with the Secretariat, shall establish the necessary administrative and technical mechanisms and provide the financial and technical support required by public institutions of higher education and research for the interconnection between their networks, Sufficient capacity, forming a national education and research network, as well as the interconnection between this national network and the specialized international networks in the academic field.

Article 214. The dependencies and entities of the Federal Public Administration shall support the development of social coverage programs and connectivity in public places, as well as the digital strategy issued by the Federal Executive.

Article 215. The programs of social coverage and connectivity in public places will have the mechanisms

determined by the Secretariat, with the support of the Ministry of Finance and Public Credit.